

11. STATEMENT OF WORK *(The Contractor shall furnish necessary materials, services, facilities and otherwise do all things necessary for, or incident to, the performance of the work set forth below)*

From your comment on the phone, I got the impression this is a Planning TDD for START? If so, you don't need a planning TDD or this Statement of Work like this. You can do a START TDD for RS assessment (different Task Order than a CERCLA Task Order 0001 or an OPA Task Order 0002).

If this is a planning TDD for ERRS, then you need the Task Order TDD form with SOW (Statement of Work) (attached to the email for your convenience)

The goal of this planning TDD is to evaluate options to reduce the risk associated with residual radioactive isotopes, metals, and VOCs at the Fansteel Site (Site). The contractor shall evaluate existing information on the Site to determine the best options for risk reduction factoring in cost, logistical feasibility and time to completion. Potential options to consider include but are not limited to: an on-site repository, in-situ treatment of groundwater, in-situ redirection of groundwater, redirection of on-site surface water to reduce groundwater contamination (and migration mitigation?), off-site disposal, and off-site use as product. The contractor shall: evaluate existing historical? site investigations and identify areas where more sampling is needed; identify the best on-site location for a permanent repository for radionuclides and other metals; identify potential off-site disposal options for radionuclides and other metals; identify potential end users for radionuclides and other metals. Costs????

Site Background Information:

Fansteel (FMRI, or the Site) is bound to the east by the Arkansas River (Webber Falls Reservoir), to the south by the East Shawnee Bypass, to the west by the Muskogee Turnpike, and to the north by undeveloped land owned by the Muskogee City-County Port Authority. The remaining surrounding area consists of a state college, industrial/commercial properties, and residential properties. Fencing secures the Site but can be accessed through a main entrance on the western boundary of the property. The Cherokee Nation and Muskogee (Creek) Nation, are within a four-mile radius of the Site and may have areas of cultural significance. Fansteel operated a metal processing facility which produced tantalum and columbium metal products from 1956 to 1989. The raw material (ore) used for tantalum and columbium production contained uranium and thorium as naturally occurring trace constituents. The concentrations of natural uranium and natural thorium were sufficient to cause the ores and slags to be classified as source materials by the Atomic Energy Commission (AEC), which originally issued License No. SMB-911 in 1967 to Fansteel, Inc.

From 1999-2001, Fansteel attempted to resume operations and a new chemical extraction process was implemented and then suspended in late 2001 due to process difficulties and a decline in the price of tantalum. In 2004, Fansteel went into bankruptcy. As part of a court-ordered reorganization, a separate subsidiary, FMRI, was formed for the sole purpose of Site cleanup and decommissioning.

Previous EPA Removal Activities:

The Site was identified as a potentially hazardous waste site and entered into the Superfund



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Enterprise Management System (SEMS) under identification number OKD007221831. EPA teams conducted a Site Inspection (SI) on October 7, 1981. During the SI, the team collected one soil and one sediment sample from an outfall and seepage location from the Site to the Arkansas River. These samples were analyzed for metals, fluorides, and polychlorinated biphenyls (PCBs). Based on the analytical results, an observed release to surface water was documented. On June 12, 2018, the Oklahoma Department of Environmental Quality (ODEQ) performed a Preliminary Reassessment, the results of which indicated that further sampling at the Site was warranted. EPA produced an Expanded Site Inspection Report (ESI) in November 2019 that found elevated toxic metals and elevated radioactive isotopes in surface water and groundwater.

In August, 2018, EPA conducted a removal action to dispose of one tank of ammonium hydroxide (estimated to contain 3,000 gallons) and the contents of an on-site wet chemistry laboratory.

In April, 2019, EPA conducted an Expanded Site Investigation (ESI). Sampling conducted as part of this ESI confirmed a TCE plume on the north side of the property and elevated metals and radioactive isotopes in several areas throughout the property.

In July, 2019, EPA conducted a gamma radiation survey of the property. The survey identified several radioactive hotspots:

- The Former Pond 2 trench (45X background);
- Sodium Reduction Building (gamma radiation not measured);
- Partially covered soil stockpile near Building 4 (27X background); and
- two anomalous readings – the Pond 6 levee (25X background) and outside the Sodium Reduction Building (17X background).

Is this the beginning of the Scope of Work? If So, I'd Bold it, or give it a Section Heading.

1. The contractor shall: Review existing data to determine areas to focus further sampling or investigation with the intent to determine the feasibility of developing either on-site disposal, off-site disposal or off-site shipment for reclamation. Be aware that many of these sources are dated and conditions on the ground are likely to have changed. Sources of existing data include but are not limited to:

Material available on NRCs ADAMS search site - <https://www.nrc.gov/site-help/search.html?q=fansteel&site=allSites#gsc.tab=0&gsc.q=fansteel&gsc.page=1>

2. Assess/evaluate: on-site locations for a permanent repository including but not limited to: former Pond 2 and former Pond 3 for suitability as a permanent repository for on-site radioactive isotopes and other metals. Material to be disposed includes: contaminated soil, waste, or Work In Progress (WIP) material; bags/supersacks of contaminated soil in the Sodium Reduction Building, partially covered soil stockpile near Building 4; and radiation anomalies noted at the Pond 6 levee and outside the Sodium Reduction Building. These materials shall be evaluated for suitability as fill or disposal in any on-site repository and/or off-site disposal and/or off-site continued use.

3. The contractor shall compare locations on-site to determine the best location for construction of an on-site repository. The contractor shall consider: cost of moving material to repository; ability of repository to protect groundwater, surface water, soils, human health and the environment; ability of repository to withstand potential flooding and/or erosion from adjacent waterways; the potential to use chemical additives in the repository to reduce future risk by reducing mobility of radioactive isotopes and other metals. For each waste proposed for on-site disposal, the contractor shall provide a cost comparison for off-site disposal.

Deliverable(s): A final report including the recommended technique(s) for the consolidation and final disposal of all identified wastes at the Fansteel site. Include:

- feasible alternatives, if any, that were considered
- Cost Estimates,
- duration,
- further sampling requirements,
- equipment requirements including any special equipment that may require advanced scheduling or other considerations, and
- expected labor required
- prospective disposal facilities (does not require an agreement at this time).

(is this also in the final report deliverable?) Identify any obstacles or additional requirements necessary to accomplish removal of the material and disposal. (A Workplan is not required at this time. EPA will verify and select the technique to be used.) The contractor shall coordinate with State and local partners to identify potential obstacles and identify potential partners for managing potential institutional controls in perpetuity.

(this is duplicate of item 1. Or is this required in the final report deliverable?) Review existing data to determine areas to focus further sampling or investigation with the intent to determine the feasibility of developing either on-site disposal, off-site disposal or off-site shipment for reclamation. Be aware that many of these sources are dated and conditions on the ground are likely to have changed. Sources of existing data include but are not limited to:

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EPA ESI 2019

EPA gamma survey 2019

ODEQ available information

Other information identified by EPA OSC

NOTES from Roberto

EAS add specifics

WBS - click tasking s PICK **RS**, pick however many activities you want them to provide, then add to each for any specifics.

Review data –

Report based on review of data

In addition to regular stuff

Specific elements (This is only Tasks assigned to the contractor; details are followed up in the Description)

- Facility is...

- Contract will show...

- Coordinate with state, nrc, errs, locals

- Identify data gaps

Description of work..

- Always start with ceiling 30k

Don't forget the typical language that helps the PO/CO/OSC/Contractor at the start of this section.

Funding for this effort will come from... (it's a statement in all START TDDs)

Ceiling/budget for this work is initiated at xxx

Primary OSC is

Alternate OSC is

Short sentence or two describing the Site and response you are conducting (e.g. removal assessment to determine disposal/reclamation options, removal techniques (options), removal cost estimates, logistics needs, sampling requirements/data gaps, etc. based on review of historical site docs and follow up field assessment(?), etc.

Contractor shall provide a Tier 1, 2, 3 response? (Tier 1 is a typical small crew conducting oversight, site documentation, etc. Tier 2 includes more sampling efforts.

Then describe Contractor shall:

1. Conduct written and photodocumentation (if required)
2. Website update?
3. Do you need GIS/mapping?
4. Technical support?
5. Review historical Site documentation for data gaps, logistical needs, etc
6. Provide a detailed Removal Assessment Report that includes...
7. Do you want the contractor to do cost documentation? With RCMS or START cost tracking? (Note, if you are doing a lot of remote work without direct OSC oversight, this is the easiest way to approve or not approve or question charges by a contractor. If you are in the field, this is also a good tool to see if you have persons charging that are not on-site and what they are contributing to your response and catch "typos" or charging to the wrong project. Don't assume the vouchers, the 1900's, etc are correct. How often do you want 1900s?
8. Is there any other tasking you need the contractor to do?
9. Do you need sampling? If so, what kind?

10. If sampling, you want a QASP?
11. HASP?
12. Analytical services?
13. Do you want weekly updates/summaries for anything?
14. Contact OSC upon rept of this TDD for additional background information (this is where/when you can give them the extra background info in your draft).

However, if this is for an ERRS Planning TDD, your format looks good. I'd bold/separate the sections (see the attachment I sent you). You'll also need an IGCE. The one I attached is for year 4 of the ERRS contract. Note, if this is for an ERRS Planning TDD, if you want them to do something that is not listed in your tasking, you have to amend the planning TDD before they can do the task.

Include money for field work

No travel = 3k/week per start
~ 30 k